DETAILED ACTION

This action is responsive to the amendment of the applicant filed on 10/27/09.

Claims 1-3,5-6,8-10,12,14-15,17-18,20 are presented for further examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3,5-6,9-10,12,14-15,17-18,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (Albert) (US 6,970,913 B1) and further in view of Richter et al. (Richter) (US 2003/0046396 A1).

2. Claim 1, Albert teaches a communications system comprising:

a plurality of servers (i.e. servers 1-3) connected together in a network (i.e. network 210) for processing a plurality of different job types (i.e. processing incoming and outgoing packets or handling different connections) having respective same resource usage characteristics (i.e. usage of processing capacity) associated therewith (Col. 6, L. 51-55; and Col. 13, L. 60-65; and Col. 30, L. 14-31; and Col. 31, L. 53-59);

each server determining a respective health metric thereof based upon at least one job being processed (i.e. determining a usage of processing capacity

for each of the virtual machine that is being implemented) thereby and weighting the health metric (i.e. weighting the usage of processing capacity) based upon the respective resource usage characteristic of the at least one job (i.e. at least one virtual machine) (figure 14; and Col. 30, L. 1-31; and Col. 31, L. 53-59; and Col. 32, L. 49-51); and

said servers mapping the weighted health metrics (i.e. weights) for same resource usage characteristics to a common scale (i.e. a common level) (Col. 3, L. 51-58; and Col. 30, L. 1-31, L. 61-Col. 31, L. 3); and

a dispatcher (i.e. service manager 1140 in figure 11A) for collecting the commonly scaled weighted health metrics (i.e. level of load as a weight factor which is a number of connections being serviced by each server) (i.e. weights) from said servers (i.e. servers 1-4) by polling said servers for the weighted health metrics (i.e. retrieving the weights for each machine is considered as polling the weights for each server) (Col. 30, L. 43-52; and Col. 32, L. 23-41) and distributing jobs to said servers based thereon (figure 14; and Col. 3, L. 59-Col. 4, L. 3; and Col. 30, L. 1-49; and Col. 31, L. 53-Col. 32, L. 51).

Albert fails to teach different resource usage characteristics, and resource usage characteristic representing resources being consumed by the at least one job. However, Richter, in the same field of endeavor having closely related objectivity, teaches different resource usage characteristics (paragraph 368,372,374-375,380); and resource usage characteristic representing resources

being consumed by the at least one job (i.e. "using a resource usage accounting methodology that characterizes resource consumption for various types of information management and/or various types of information manipulation tasks, e.g., in a heterogeneous information management system environment. Examples of such systems include those described elsewhere herein having multiple subsystems (e.g., processing engines) performing distinctive functions with each subsystem having different resource principals... that process different usage characteristics" in paragraph 368, and "resource usage accounting may be based on a resource utilization value that is reflective of the system resource consumption required to perform a particular type of information management and/or to accomplish a particular information manipulation task. Such a resource utilization value may also be reflective of system resource consumption required to perform the particular type of information management and/or to accomplish the particular information manipulation task" in paragraph 370. According to these cited paragraphs, the resource usage characteristic, which is representing resources being consumed or used by the at least one type of information management or one type of information manipulation task (this is equivalent to one job), is characterized in the resource usage accounting) (paragraph 368,370-372,374-375,380).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Richter's teachings of different resource usage characteristics and resource usage characteristic representing

resources being consumed by the at least one job, in the teachings of Albert in load balancing using distributed forwarding agents with application based feedback for different virtual machines, for provide an advantage for generating load balancing for processing engines.

3. Claim 2, Albert and Richter disclose the invention substantially as claimed. Richter teaches wherein the resource usage characteristics comprise at least one processing utilization characteristic and at least one input/output utilization characteristic (paragraph 368,372,374-375,380).

4. Claim 3, Albert and Richter disclose the invention substantially as claimed. Albert teaches further comprising a knowledge base for cooperating with said dispatcher (i.e. service manager) for storing the weighted health metrics (i.e. weights) (Col. 31, L. 49-59).

5. Claim 5, Albert and Richter disclose the invention substantially as claimed. Albert teaches wherein said servers provide completed job results to said dispatcher (i.e. service manager), and wherein the weighted health metrics are provided to said dispatcher with the completed job results (i.e. "the feedback messages from the real machines is that the messages somehow express the level of load on

the real machine as a result of handling connections", and "a process executed on a server for determining a weight to be sent to the service manager in a feedback message...Next, in a step 1206, the server determines the remaining processing capacity". From these quotation notes, it does teach the weights are sent to the service manger with the completed job/process results) (Col. 30, L. 1-31).

6. Claim 6, Albert and Richter disclose the invention substantially as claimed. Albert teaches further comprising at least one load generator (i.e. load balance engine/algorithm) for generating the jobs for said servers and communicating the jobs to said dispatcher; and wherein said dispatcher further provides the completed job results to said at least one load generator (Col. 3, L. 59-Col. 4, L. 3; and Col. 8, L. 57-67; and Col. 9, L. 16-22; and Col. 11, L. 56-65; and Col. 12, L. 46-49; and Col. 30, L. 1-31).

7. Claim 9, Albert teaches a load distributor for a plurality of servers (i.e. servers 1-3) connected together in a network (i.e. network 210) for processing a plurality of different job types (i.e. process incoming and outgoing packets) having respective same resource usage characteristics (i.e. usage of processing capacity) associated therewith (Col. 6, L. 51-55; and Col. 13, L. 60-65; and Col. 30, L. 14-31; and Col. 31, L. 53-59), and each server determining a respective

health metric (i.e. level of load as a weight factor which is a number of connections being serviced by each server) thereof based upon at least one job being processed thereby and weighting the health metric (i.e. weight) based upon the respective resource usage characteristic of the at least one job (i.e. usage of processing capacity) (figure 14; and Col. 30, L. 1-31; and Col. 31, L. 53-59; and Col. 32, L. 49-51), the load distributor comprising:

a dispatcher (i.e. service manager 1140 in figure 11A) for collecting the weighted health metrics (i.e. weights) from the servers (i.e. servers 1-4) by polling said servers for the weighted health metrics (i.e. retrieving the weights for each machine is considered as polling the weights for each server) (Col. 30, L. 43-52; and Col. 32, L. 23-41) and distributing jobs to the servers based thereon (figure 14; and Col. 3, L. 59-Col. 4, L. 3; and Col. 30, L. 1-49; and Col. 31, L. 53-Col. 32, L. 19); and

said servers mapping the weighted health metrics (i.e. weights) for same resource usage characteristics to a common scale (i.e. a common level) (Col. 3, L. 51-58; and Col. 30, L. 1-31, L. 61-Col. 31, L. 3); and

a knowledge base for cooperating with said dispatcher (i.e. service manager) for storing the commonly scaled weighted health metrics (i.e. weights) (Col. 31, L. 49-59).

Albert fails to teach different resource usage characteristics and the resource usage characteristic representing resources being consumed by the at

least one job. However, Richter, in the same field of endeavor having closely related objectivity, teaches different resource usage characteristics (paragraph 368,372,374-375,380), and the resource usage characteristic representing resources being consumed by the at least one job (i.e. "using a resource usage accounting methodology that characterizes resource consumption for various types of information management and/or various types of information manipulation tasks, e.g., in a heterogeneous information management system environment. Examples of such systems include those described elsewhere herein having multiple subsystems (e.g., processing engines) performing distinctive functions with each subsystem having different resource principals... that process different usage characteristics" in paragraph 368, and "resource usage accounting may be based on a resource utilization value that is reflective of the system resource consumption required to perform a particular type of information management and/or to accomplish a particular information manipulation task. Such a resource utilization value may also be reflective of system resource consumption required to perform the particular type of information management and/or to accomplish the particular information manipulation task" in paragraph 370. According to these cited paragraphs, the resource usage characteristic, which is representing resources being consumed or used by the at least one type of information management or one type of information manipulation task (this is equivalent to one job), is characterized in the resource usage accounting) (paragraph 368,370-372,374-375,380).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Richter's teachings of different resource usage characteristics and the resource usage characteristic representing resources being consumed by the at least one job, in the teachings of Albert in load balancing using distributed forwarding agents with application based feedback for different virtual machines, for provide an advantage for generating load balancing for processing engines.

8. Claim 14, Albert teaches a job distribution method for a plurality of servers (i.e. servers 1-3) connected together in a network (i.e. network 210), the servers for processing a plurality of different job types (i.e. process incoming and outgoing packets) having respective different resource usage characteristics (i.e. usage of processing capacity) associated therewith (Col. 6, L. 51-55; and Col. 13, L. 60-65; and Col. 30, L. 14-31; and Col. 31, L. 53-59), the method comprising:

determining a respective health metric of each server (i.e. determining level of load as a weight factor which is a number of connections being serviced by each server) based upon at least one job being processed thereby and weighting the health metric (i.e. weight) based upon the respective resource usage characteristic of the at least one job (i.e. usage of processing capacity) (figure 14; and Col. 30, L. 1-31; and Col. 31, L. 53-59; and Col. 32, L. 49-51); and

polling the servers for the weighted health metrics (i.e. retrieving the weights for the machines is considered as polling the weights for the servers) (Col. 30, L. 43-52; and Col. 32, L. 23-41) mapping the weighted health metrics (i.e. weights) for same resource usage characteristics to a common scale (i.e. a common level) (Col. 3, L. 51-58; and Col. 30, L. 1-31, L. 61-Col. 31, L. 3); and

distributing jobs to the servers based upon the commonly scaled weighted health metrics (figure 14; and Col. 3, L. 59-Col. 4, L. 3; and Col. 30, L. 1-49; and Col. 31, L. 53-Col. 32, L. 19).

Albert fails to teach different resource usage characteristics, and the resource usage characteristic representing resources being consumed by the at least one job. However, Richter, in the same field of endeavor having closely related objectivity, teaches different resource usage characteristics (paragraph 368,372,374-375,380), and the resource usage characteristic representing resources being consumed by the at least one job (i.e. "using a resource usage accounting methodology that characterizes resource consumption for various types of information management and/or various types of information manipulation tasks, e.g., in a heterogeneous information management system environment. Examples of such systems include those described elsewhere herein having multiple subsystems (e.g., processing engines) performing distinctive functions with each subsystem having different resource principals... that process different usage characteristics" in paragraph 368, and "resource usage accounting may be based on a resource utilization value that is reflective

of the system resource consumption required to perform a particular type of information management and/or to accomplish a particular information manipulation task. Such a resource utilization value may also be reflective of system resource consumption required to perform the particular type of information management and/or to accomplish the particular information manipulation task" in paragraph 370. According to these cited paragraphs, the resource usage characteristic, which is representing resources being consumed or used by the at least one type of information management or one type of information manipulation task (this is equivalent to one job), is characterized in the resource usage accounting) (paragraph 368,370-372,374-375,380).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Richter's teachings of different resource usage characteristics and the resource usage characteristic representing resources being consumed by the at least one job, in the teachings of Albert in load balancing using distributed forwarding agents with application based feedback for different virtual machines, for provide an advantage for generating load balancing for processing engines.

9. Claims 10,12 are corresponding apparatus claims of system claims 2,5. Therefore, they are rejected under the same rationale.

10. Claim 15 is corresponding method claim of system claim 2. Therefore, it is rejected under the same rationale.

11. Claims 17-18,20 are corresponding computer-readable medium claims of apparatus claims 9-10,12. Therefore, they are rejected under the same rationale.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albert and Richter as applied to claim 1 above, and further in view of Ross et al. (Ross) (US 6,263,212B1).

13. Claim 8, Albert and Richter are relied upon for the disclosure set forth in the previous rejection. Albert teaches the jobs relate to IP packet processing (Col. 6, L. 51-63; and Col. 7, L. 31-39).

Albert and Richter fail to teach the jobs relate to electronic mail (e-mail) processing. However, Ross, in the same field of endeavor having closely related objectivity, teaches the jobs relate to electronic mail (e-mail) processing (Col. 6, L. 1-10).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Ross's teachings of the jobs relate to electronic mail (e-mail) processing, with Richter's teachings of different resource usage characteristics, in the teachings of Albert in load balancing using distributed forwarding agents with application based feedback for different virtual

machines, for provide an advantage for generating load balancing for email processing.

Response to Arguments

Applicant's arguments filed 10/27/09 have been fully considered but they are not persuasive.

(A) Richter et al. (or combination of Albert et al. and Richter et al.) fails to disclose weighting the health metric based upon the respective resource usage characteristic of the at least one job, the resource usage characteristic representing resources being consumed by the at least one job, as recited in claim 1.

As to point (A), in response to applicant's argument, Albert does disclose each server determining a respective health metric thereof based upon at least one job being processed (i.e. each server determines a usage of processing capacity for each of the virtual machine that is being implemented. The usage of processing capacity of each virtual machine is considered as the respective health metric of one job) and weighting the health metric (i.e. "It is partiularly advantageous to normalize the weight so that the weight of each server expresses its capacity to process packets" in Col. 30, L. 7-10. That means, each server weighting its usage of processing capacity and the usage of processing capacity is from the usages of processing capacity of the virutal machines. Thus, it is considered as the server weights its health metric) based upon the

respective resource usage characteristic of the at least one job (i.e. each server includes at least one virtual machine. Therefore, the server's usage of processing capacity is based upon the usages of processing capacity of the at least one virtual machine) [figure 14; and Col. 30, L. 1-Col. 31, L. 3, and L. 49-Col. 32, L. 51].

Although, Albert does not disclose the resource usage characteristic representing resources being consumed or used by the at least one job, but Richter as the secondary reference, does disclose this feature. First of all, the Examiner interprets as broadly drafted that "the resource usage characteristic representing resource being consumed" includes a value or an estimate value of the resource consumption that would be need to perform a particular job/task. Secondly, see Richter, "using a resource usage accounting methodology that characterizes resource consumption for various types of information management and/or various types of information manipulation tasks, e.g., in a heterogeneous information management system environment. Examples of such systems include those described elsewhere herein having multiple subsystems (e.g., processing engines) performing distinctive functions with each subsystem having different resource principals... that process different usage characteristics" [in paragraph 368], and "resource usage accounting may be based on a resource utilization value that is reflective of the system resource consumption required to perform a particular type of information management and/or to accomplish a particular information manipulation task. Such a resource utilization value may

also be reflective of system resource consumption required to perform the particular type of information management and/or to accomplish the particular information manipulation task" [in paragraph 370]. According to these cited paragraphs, the resource usage characteristic, which is representing resources being consumed or used by the at least one type of information management or one type of information manipulation task (this is equivalent to one job), is characterized in the resource usage accounting [paragraph 368,370-372,374-375,380].

In addition, as broadly drafted, claim 1 does not define any further structure/step for the resource usage characteristic representing resources being consumed by the at least one job that differ from the combination of references Albert and Richter. The obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine Richter's features of different resource usage characteristics and the resource usage characteristic representing resources being consumed by the at least one job with Albert's features to provide and generate load balancing for processing engines or servers.

Therefore, the combination of Albert and Richter has not failed to disclose weighting the health metric based upon the respective resource usage characteristic of the at least one job, the resource usage characteristic representing resources being consumed by the at least one job, as recited in claim 1.

Conclusion

Applicant's amendment necessitated the rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-CHAU NGUYEN whose telephone number is (571)272-4242. The examiner can normally be reached on 7AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VIVEK SRIVASTAVA can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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